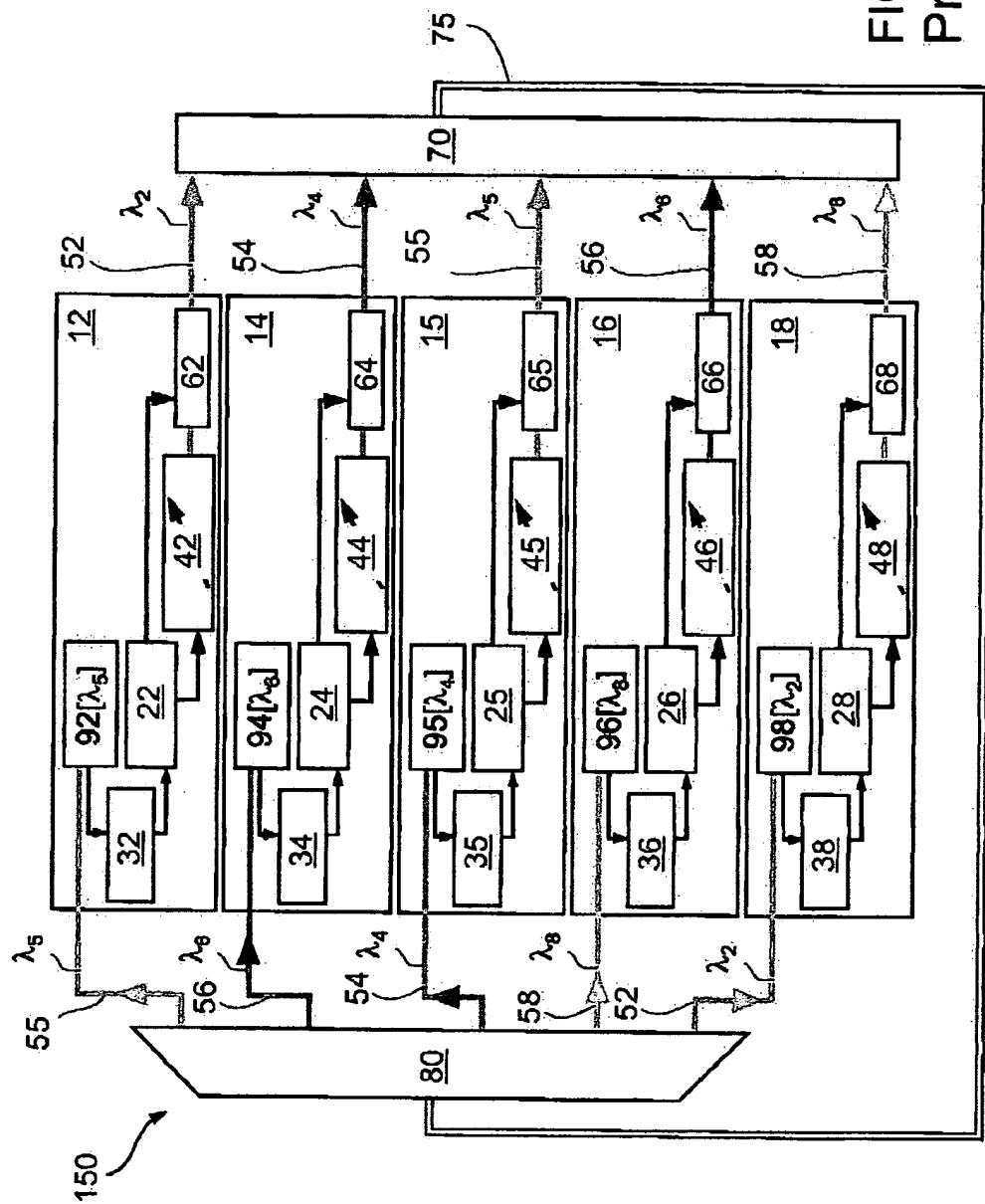


FIG. 1A Prior Art

10 Processing Element	59 Received Data
20 Transmitter	60 Modulator
30 Processing Unit	90 Wavelength Addressed Receiver
40 Tunable Laser	E Electronic Data to be Transmitted
50 Data Packet	$\lambda$ Wavelength Designation

FIG. 1B  
Prior Art



12, 14, 15, 16, 18	Processing Elements (PE)	70	Optical Coupler
22, 24, 25, 26, 28	Transmitters	75	Optical Fiber
32, 34, 35, 36, 38	Processing Units	80	Optical Wavelength Demultiplexer
42, 44, 45, 46, 48	Tunable Lasers	92, 94, 95, 96, 98	Wavelength Addressed Receiver
52, 54, 55, 56, 58	Data Packets	150	Data Network
62, 64, 65, 66, 68	Modulators		A Wavelength Designation

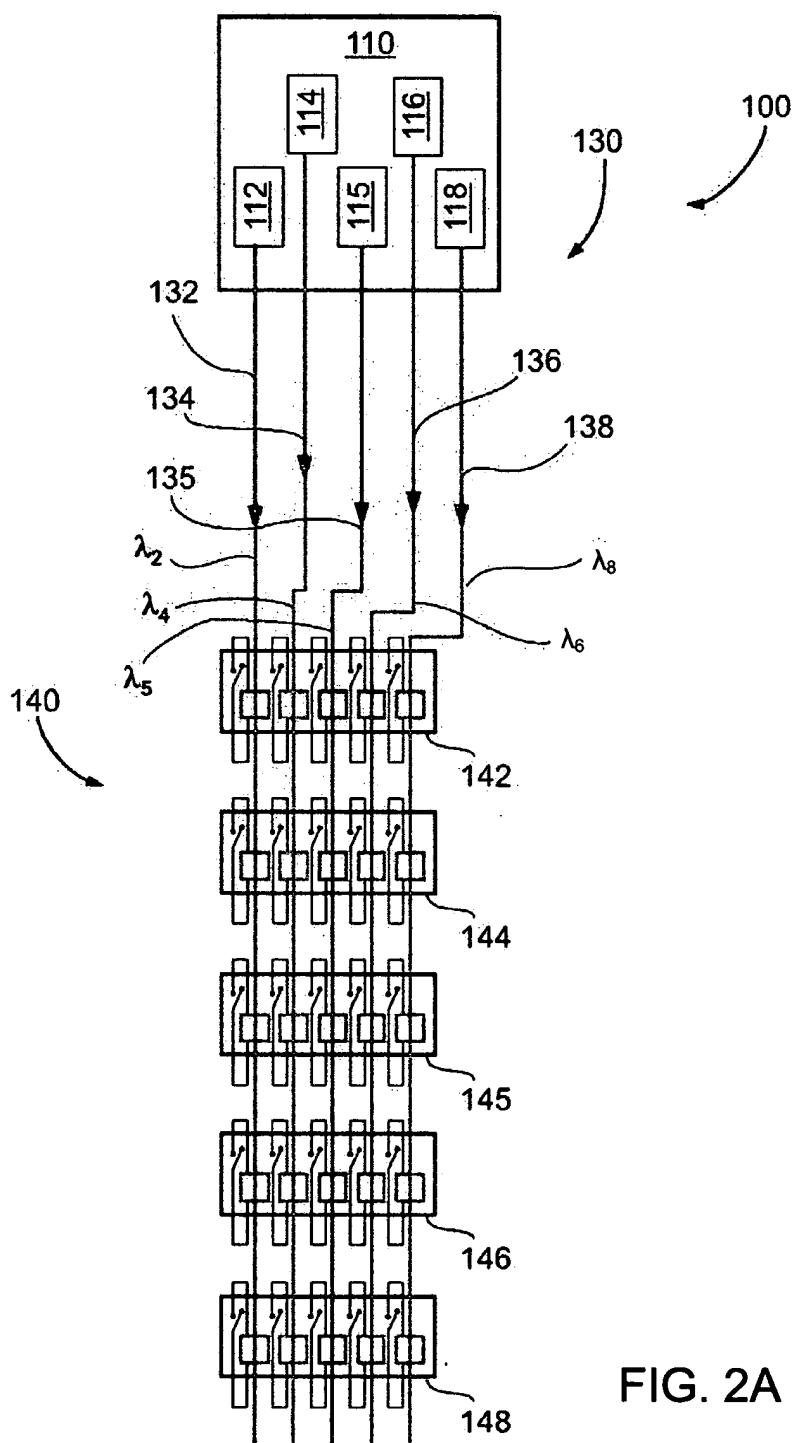


FIG. 2A

100 Laser Power Grid  
110 Laser Power Supply  
112, 114, 115, 116, 118 Laser Sources  
130 Laser Distribution Grid

140 Optical Switching Network  
132, 134, 135, 136, 138 Optical Fibers  
142, 144, 145, 146, 148 Optical Switch Arrays  
λ Wavelength Designation

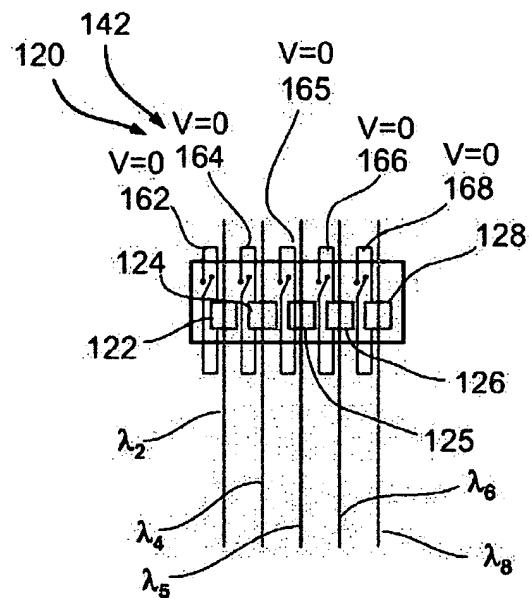


FIG. 2B

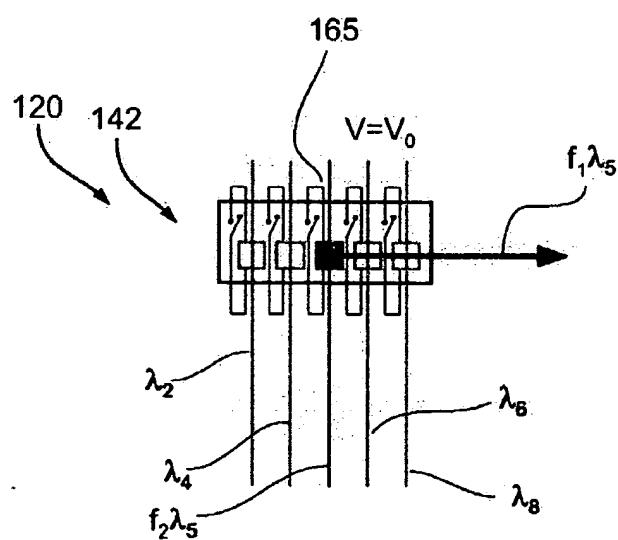


FIG. 2C

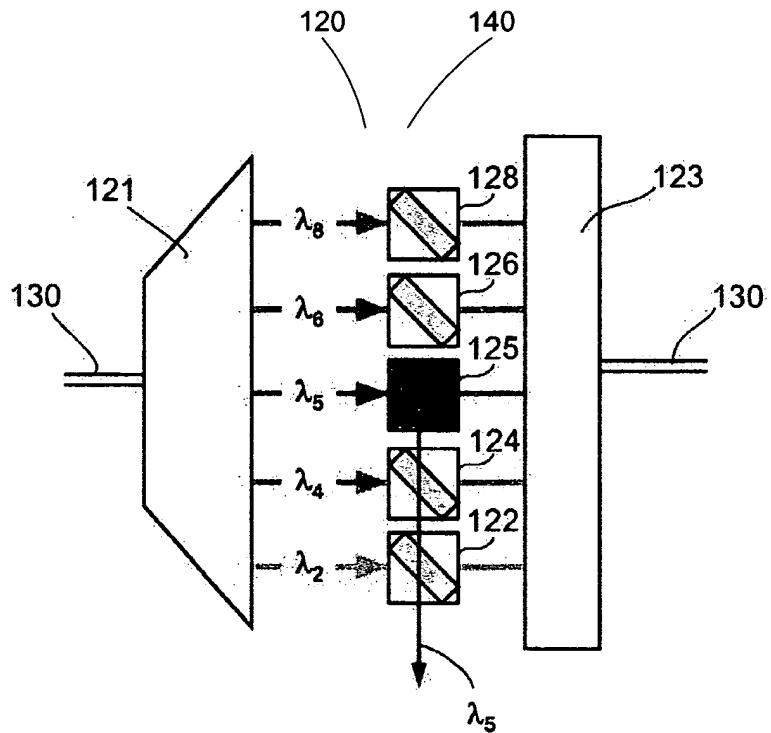


FIG. 2D

120 Optical Switch Array  
121 Optical Wavelength Demultiplexer  
122, 124, 125, 126, 128 Optical Switches  
123 Coupler  
130 Optical Fiber  
142 Optical Switch Array  
 $\lambda$  Wavelength Designation

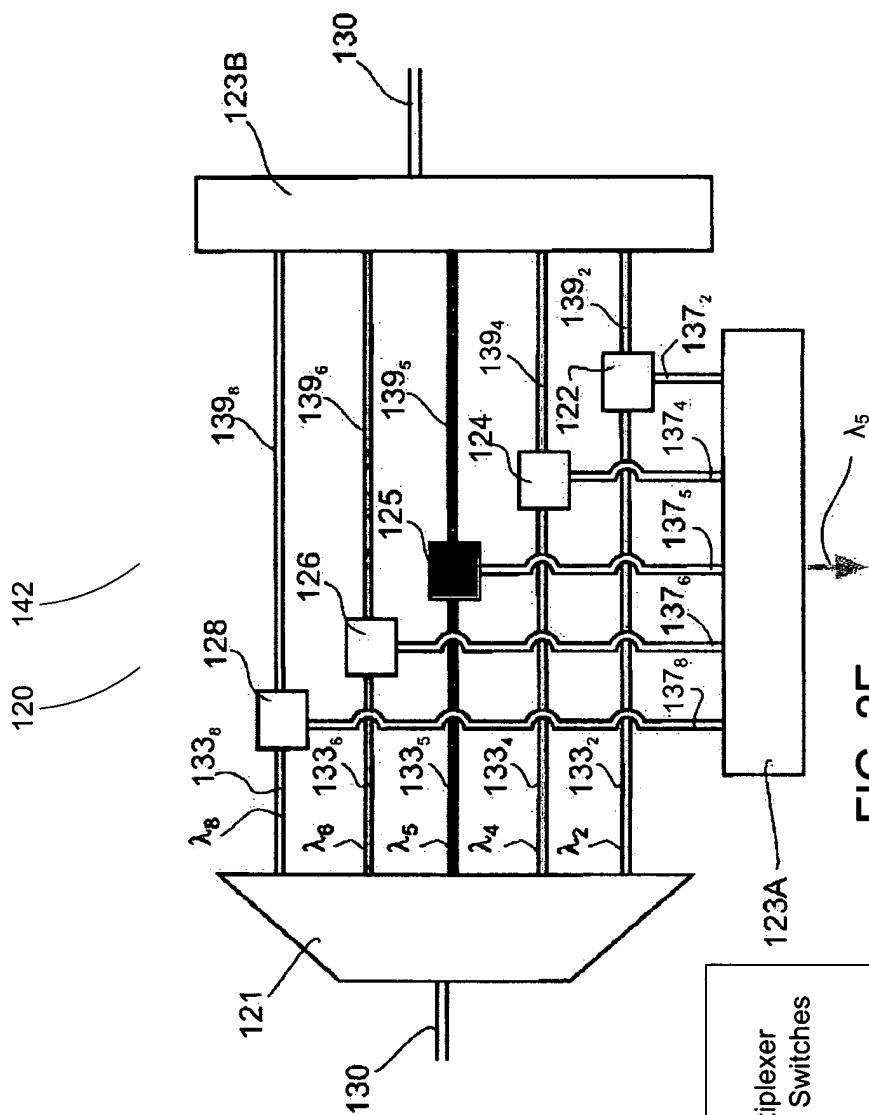


FIG. 2E

120	Optical Switch Array
121	Optical Wavelength Demultiplexer
122, 124, 125, 126, 128	Optical Switches
123A, 123B	Optical Couplers
130	Optical Fiber
133	Input Optical Fiber
137	Output Optical Fiber
$\lambda$	Wavelength Designation

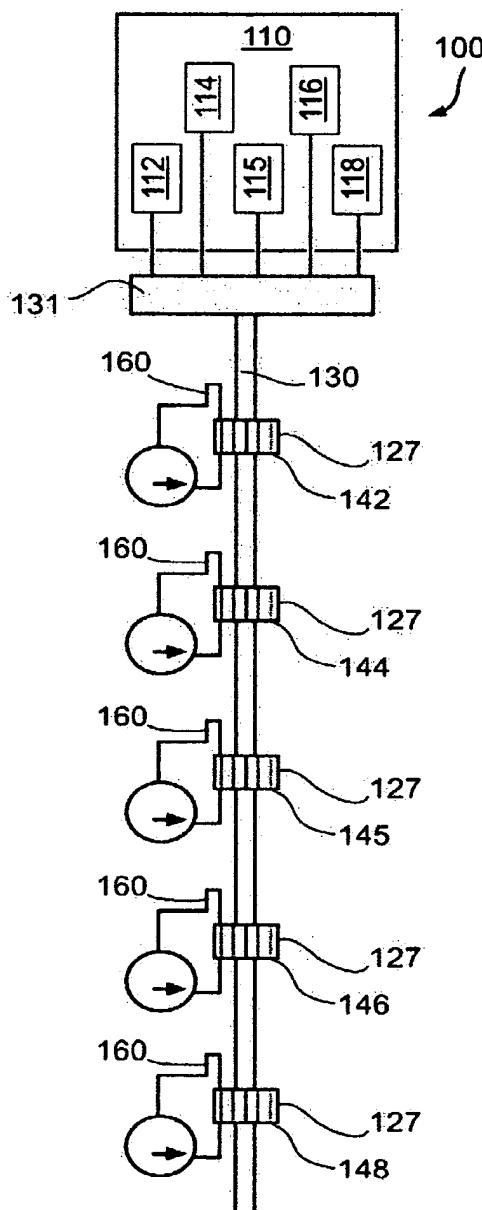


FIG. 2F

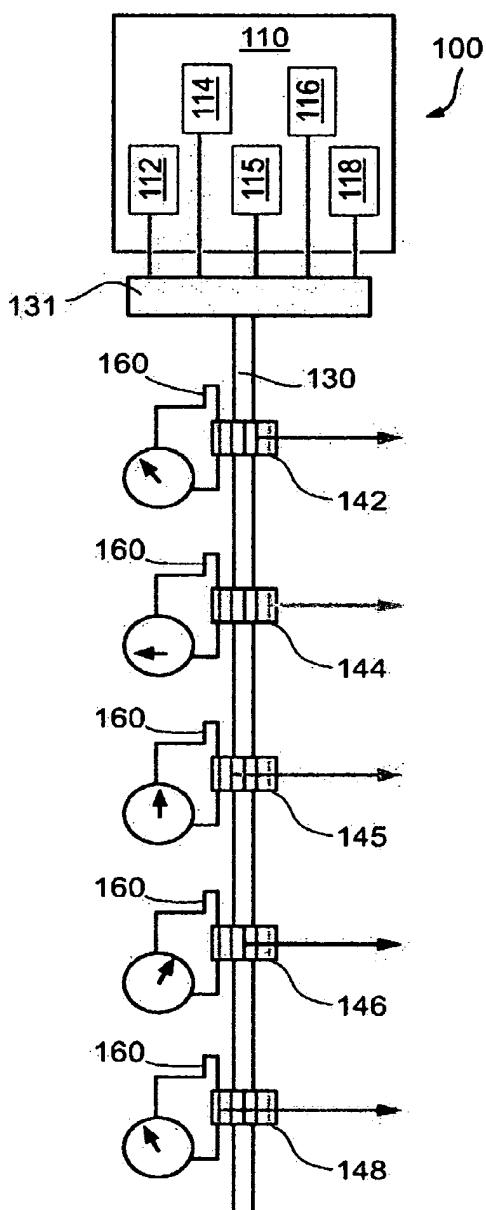


FIG. 2G

110 Laser Power Supply Station  
112, 114, 115, 116, 118 Continuous Work (CW) Laser Sources  
127 Electrohalographic Switch  
130 Optical Fiber  
131 Optical Coupler  
142, 144, 145, 146, 148 Optical Switches  
160 Variable Electric Source  
λ Wavelength Designation

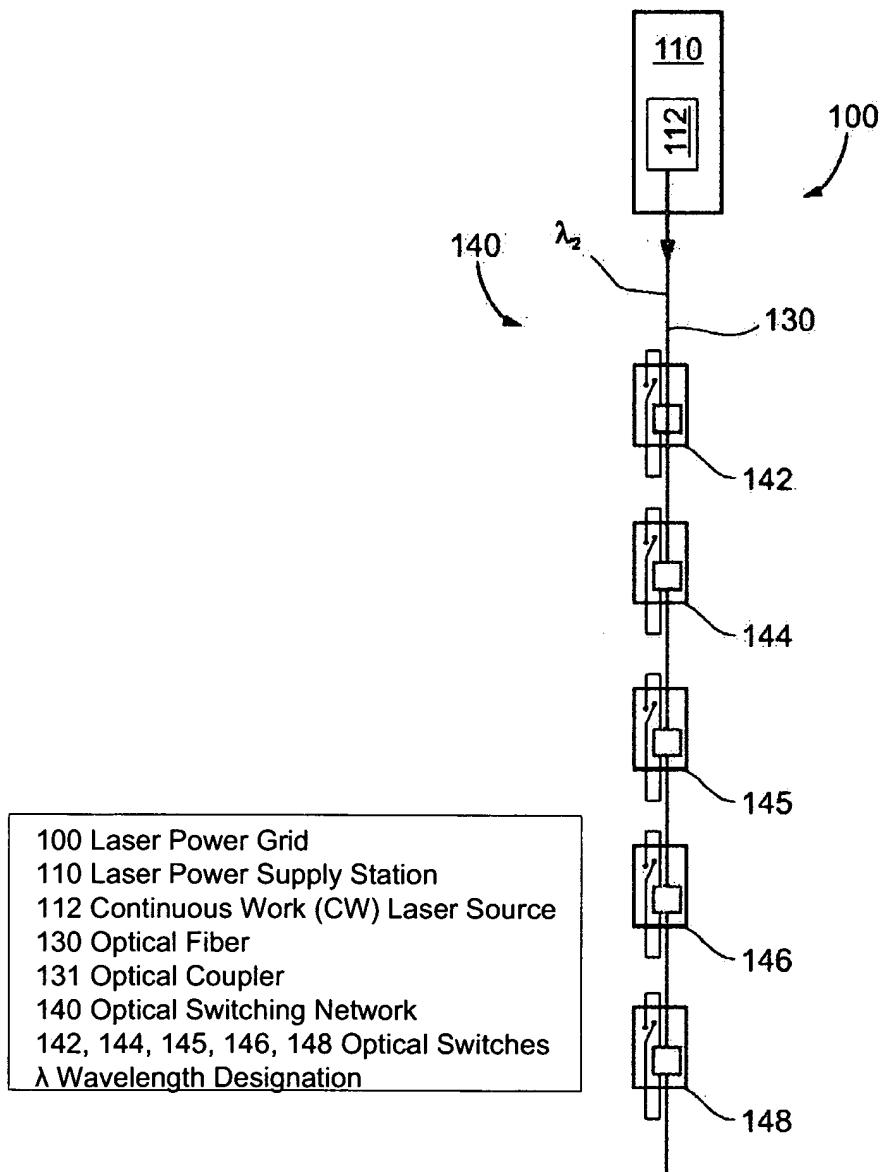


FIG. 2H

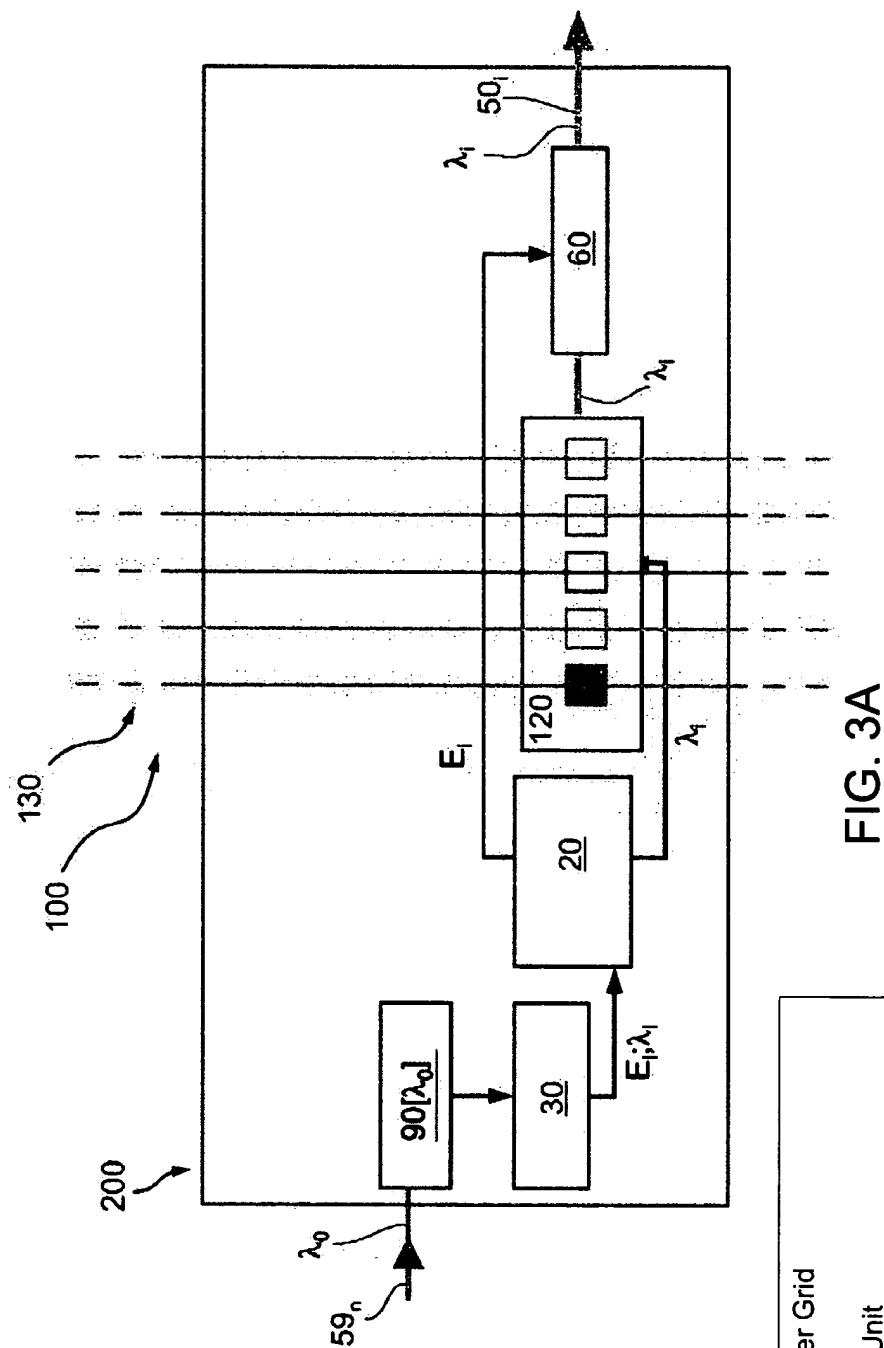


FIG. 3A

100 Laser Power Grid  
20 Transmitter  
30 Processing Unit  
50 Data Packet  
59 Received Data  
90 Wavelength Addressed Receiver  
120 Optical Switch Array  
130 Optical Fiber  
200 Processing Element (PE)  
E Electronic Data to be Transmitted  
λ Wavelength Designation

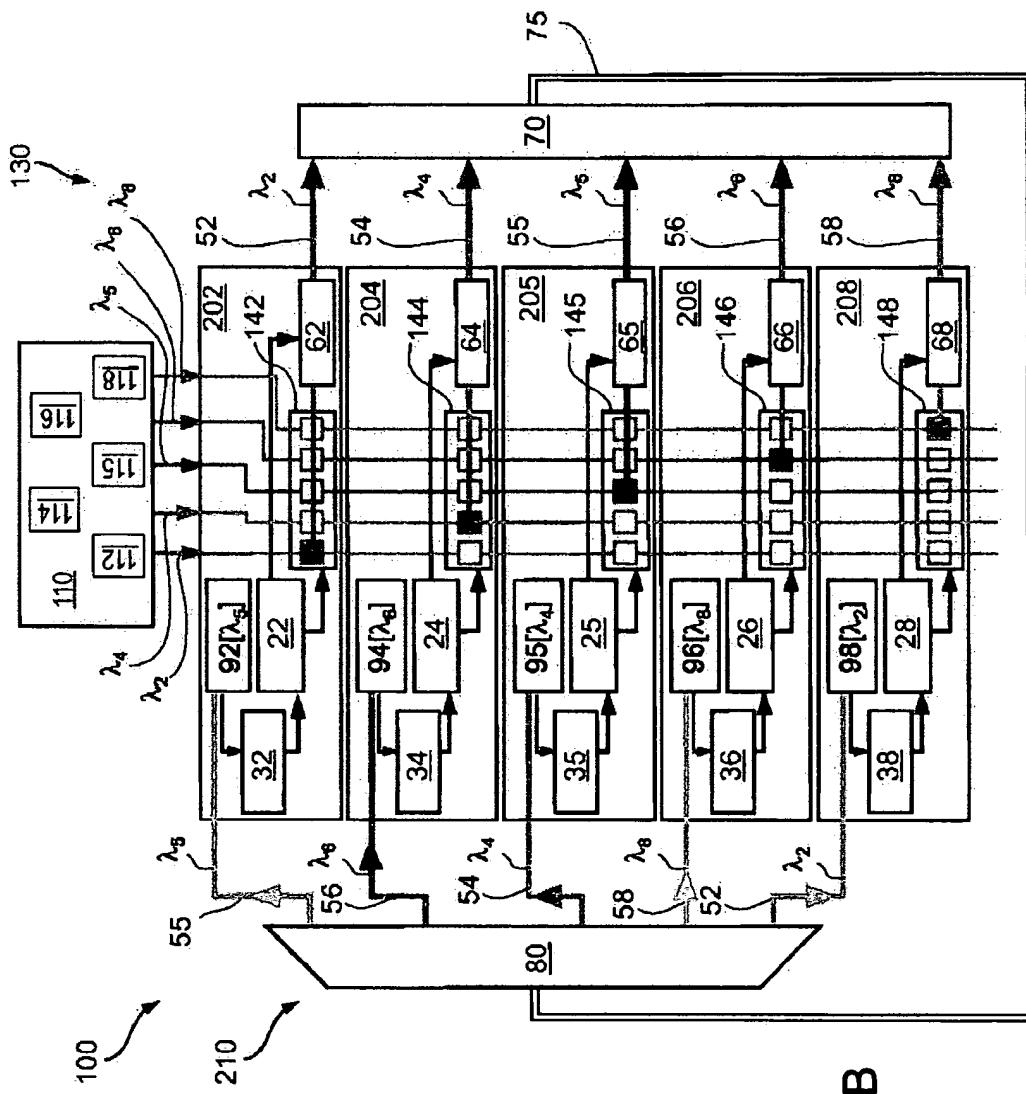
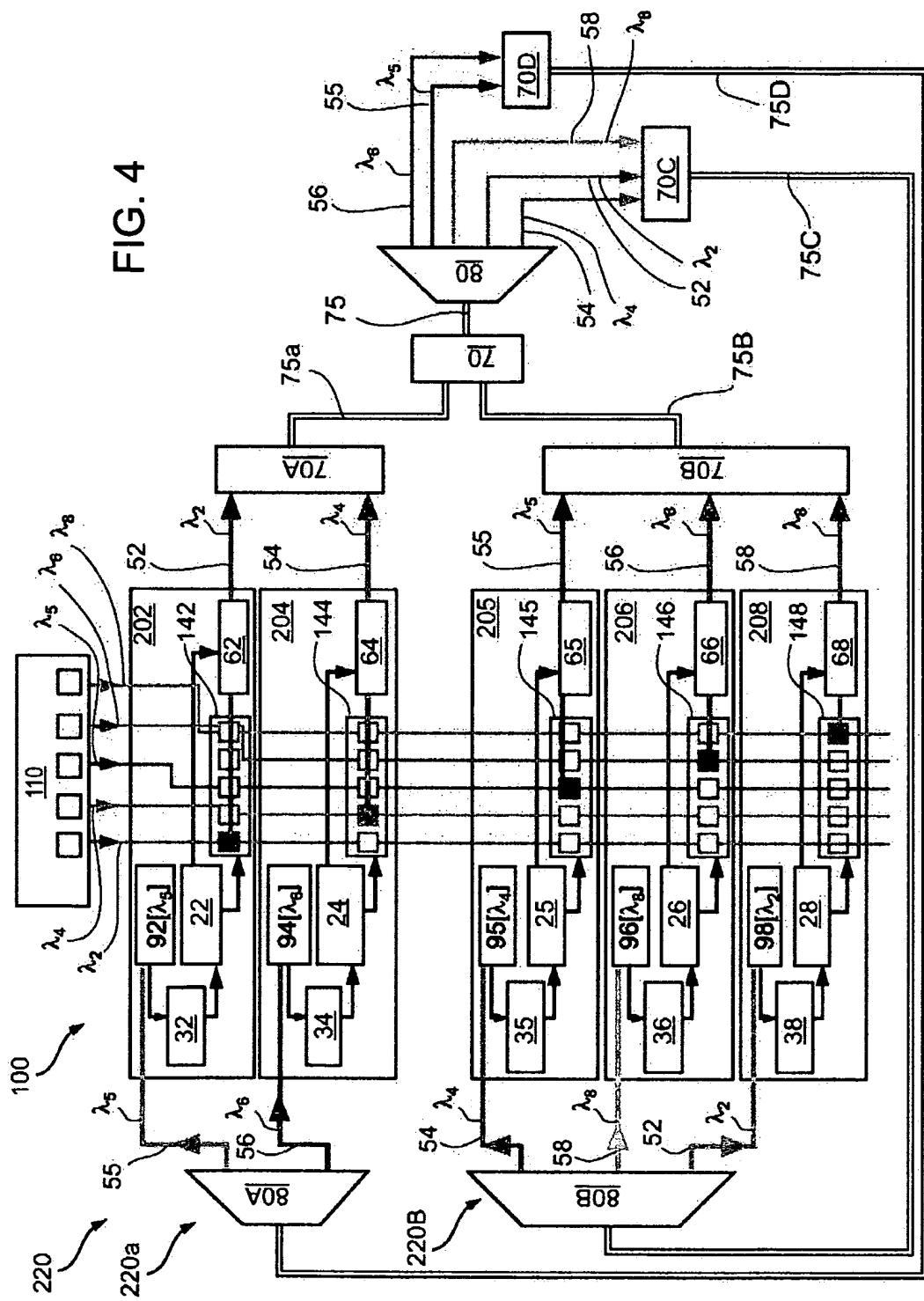


FIG. 3B

- |                    |                                  |                          |                            |
|--------------------|----------------------------------|--------------------------|----------------------------|
| 22, 24, 25, 26, 28 | Transmitters                     | 100                      | Laser Power Grid           |
| 32, 34, 35, 36, 38 | Processing Units                 | 110                      | Laser Power Supply Station |
| 52, 54, 55, 56, 58 | Data Packets                     | 112, 114, 115, 116, 118  | CW Laser Sources           |
| 62, 64, 65, 66, 68 | Modulators                       | 130                      | Laser Distribution Grid    |
| 70                 | Optical Coupler                  | 142, 144, 145, 146, 148  | Optical Switch Arrays      |
| 75                 | Optical Fiber                    | 202, 204, 205, 206, 208  | Processing Elements        |
| 80                 | Optical Wavelength Demultiplexer | 210                      | Data Network               |
| 92, 94, 95, 96, 98 | Wavelength Addressed Receivers   | λ Wavelength Designation |                            |

FIG. 4



- 22, 24, 25, 26, 28 Transmitters
- 32, 34, 35, 36, 38 Processing Units
- 52, 54, 55, 56, 58 Data Packets
- 62, 64, 65, 66, 68 Modulators
- 70, 70A, 70B, 70C, 70D Optical Coupler
- 75, 75A, 75B, 75C, 75D Optical Fibers
- 80, 80A, 80B Optical Wavelength Demultiplexer
- 92, 94, 95, 96, 98 Wavelength Addressed Receivers
- 100 Laser Power Grid
- 110 Laser Power Supply Station
- 112, 114, 115, 116, 118 CW Laser Sources
- 130 Laser Distribution Grid
- 142, 144, 145, 146, 148 Optical Switch Arrays
- 202, 204, 205, 206, 208 Processing Elements
- 220 Data Network
- 220A, 220B Preferred Locations
- λ Wavelength Designation

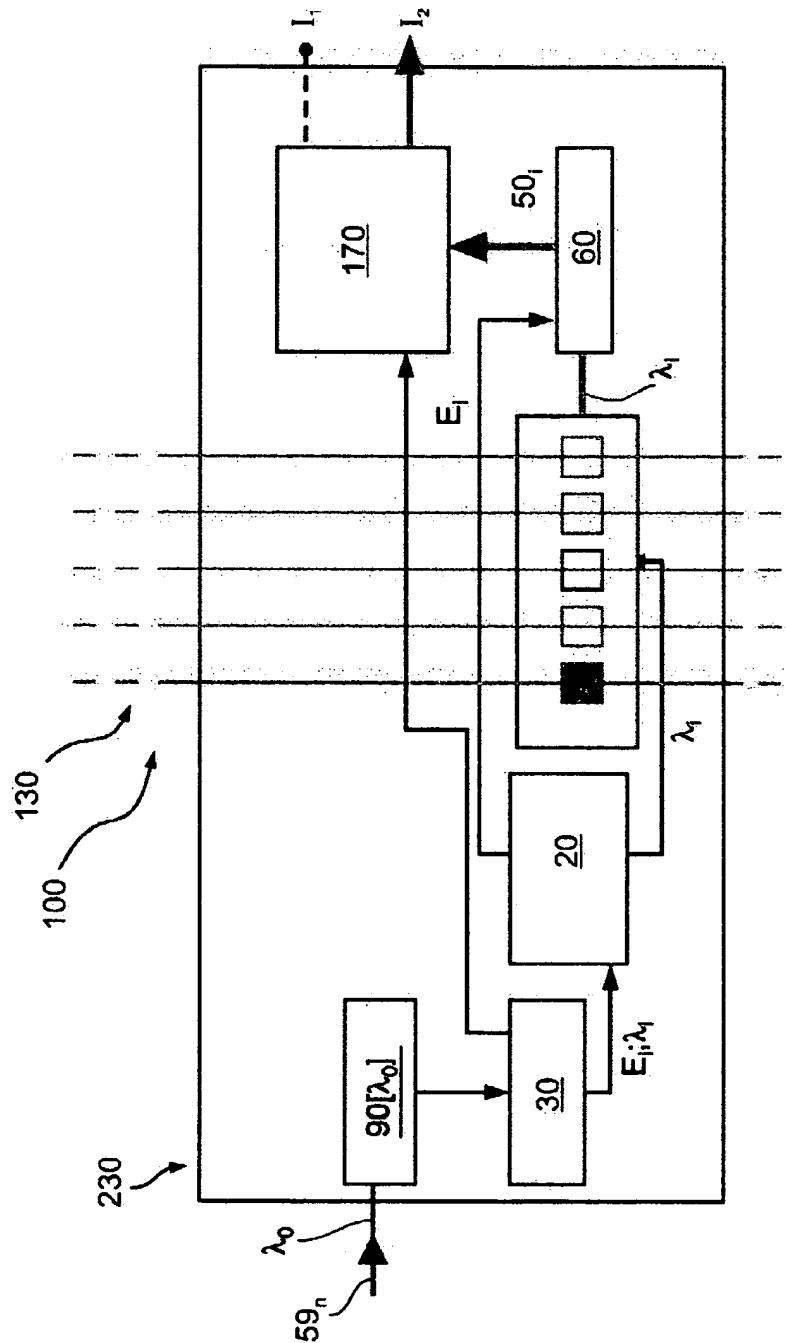


FIG. 5A

20	Transmitter
30	Processing Unit
50	Data Packet
59	Received Data
60	Modulator
90	Wavelength Addressed Receiver
100	Laser Power Grid
130	Laser Distribution Grid
170	Cluster Router
230	Processing Element
E	Electronic Data to be Transmitted
	Destination Cluster
$\lambda$	Wavelength Designation

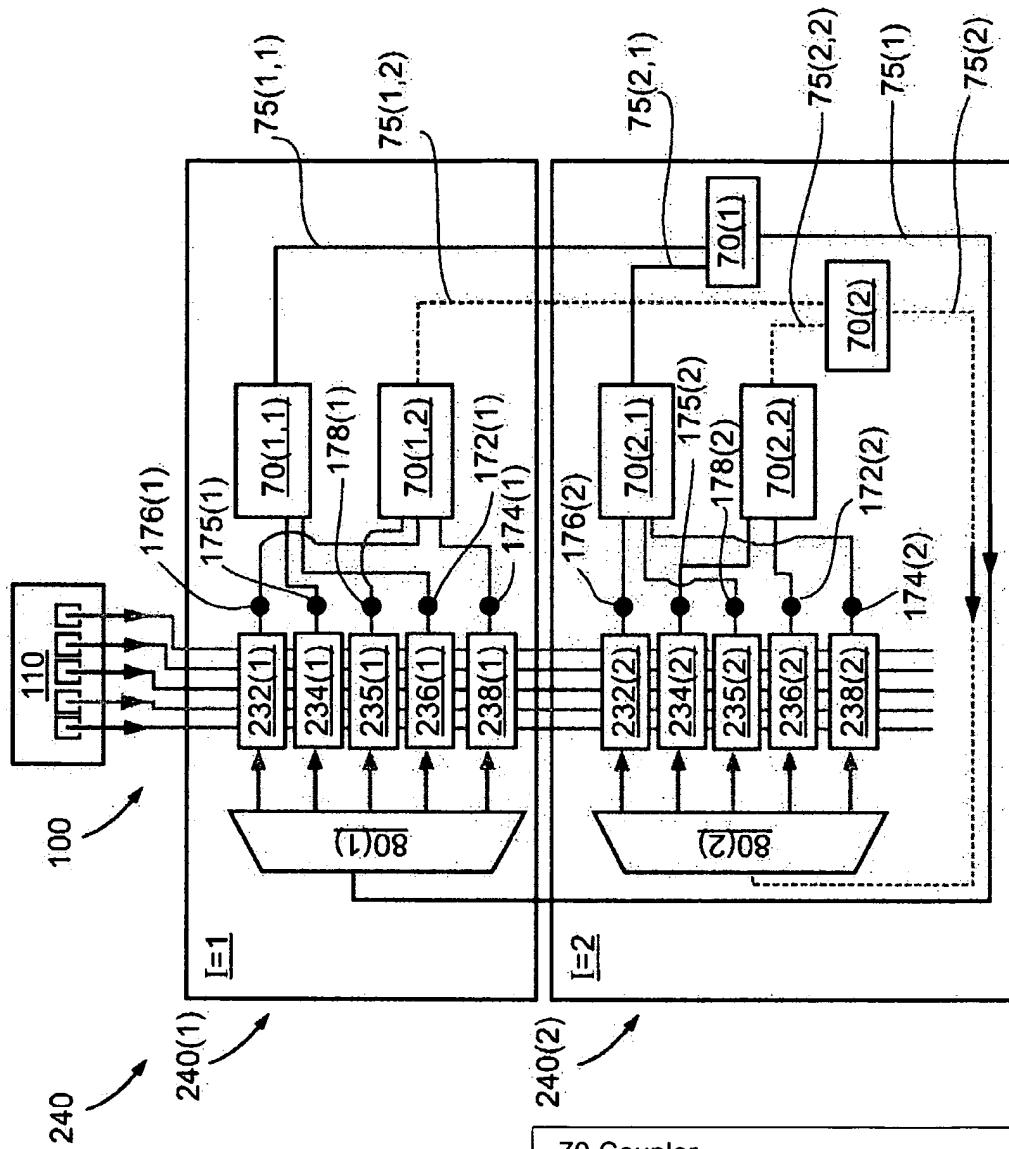


FIG. 5B

70 Coupler  
75 Optical Fiber  
100 Laser Power Grid  
110 Laser Power Supply  
172, 174, 175, 176, 178 Data Packets  
232, 234, 235, 236, 238 Processing Elements  
240, 240(1), 240(2) Clusters  
I Cluster ID

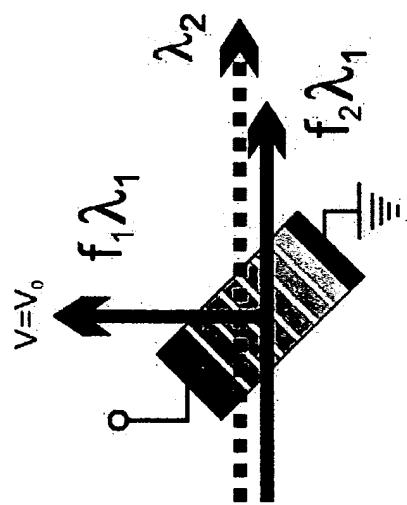


FIG. 6B

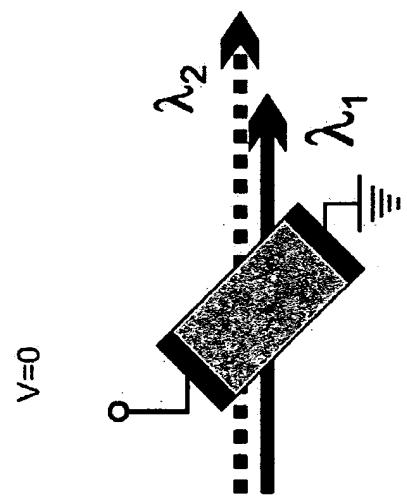


FIG. 6A